

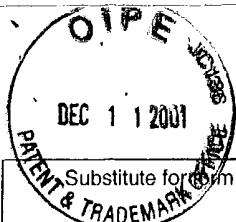
Substitute for Form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/849,452
	Filing Date	May 4, 2001
	First Named Inventor	Michael Lassner
	Group Art Unit	1632-1636
	Examiner Name	Unassigned D. LAMBERTSON
Attorney Docket Number		02-104910US

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
DL	AA	5,512,463		Stemmer	04-30-1996	
DL	AB	5,514,588		Varadaraj	05-07-1996	
	AC	5,605,793		Stemmer	02-25-1997	
DL	AD	5,763,239		Short et al.	06-09-1998	
DL	AE	5,789,228		Lam et al.	08-04-1998	
	AF	5,811,238		Stemmer et al.	09-22-1998	
	AG	5,814,473		Warren et al.	09-29-1998	
DL	AH	5,824,469		Horwitz et al.	10-20-1998	
DL	AI	5,830,696		Short	11-03-1998	
DL	AJ	5,830,721		Stemmer et al.	11-03-1998	
DL	AK	5,834,252		Stemmer et al.	11-10-1998	
	AL	5,897,450		Minushull et al.	11-17-1998	
DL	AM	5,866,363		Pieczenik	02-02-1999	
DL	AN	5,876,997		Kretz	03-02-1999	
DL	AO	5,925,749		Mathur, et al.	07-20-1999	
DL	AP	5,928,905		Stemmer, et al.	07-27-1999	
DL	AQ	5,939,250		Short, Jay M.	08-17-1999	
DL	AR	5,939,300		Robertson, et al.	08-17-1999	
DL	AS	5,942,430		Robertson, et al.	08-24-1999	
DL	AT	5,948,666		Callen, et al.	09-07-1999	
DL	AU	5,958,672		Short, Jay M.	09-28-1999	
DL	AV	5,958,751		Murphy, et al.	09-28-1999	
DL	AW	5,962,258		Mathur, et al.	10-05-1999	
DL	AX	5,962,283		Warren et al.	10-05-1999	
DL	AY	5,965,408		Short, Jay M.	10-12-1999	
DL	AZ	5,985,646		Murphy, et al.	11-16-1999	
DL	BA	6,001,574		Short et al.	12-14-1999	
Examiner Signature					Date Considered	11/12/01

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

RECEIVED

DEC 13 2001
TECH CENTER 1600/2900



Substitute for Form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/849,452
	Filing Date	May 4, 2001
	First Named Inventor	Michael Lassner
	Group Art Unit	1632 1636
	Examiner Name	Unassigned D. LAMBERTSON
Attorney Docket Number		02-104910US

DL	BB	6,004,788		Short	12-21-1999	
DL	BC	6,030,779		Short	02-29-2000	
	BD	6,054,267		Short	04-25-2000	
DL	BE	6,057,103		Short	05-02-2000	
DL	BF	6,096,548		Stemmer	08-01-2000	
	BG	6,117,679		Stemmer	09-12-2000	
DL	BH	6,132,970		Stemmer	10-17-2000	
DL	BI	6,165,793		Stemmer	12-26-2000	
DL	BJ	6,168,919		Short	01-02-2001	
DL	BK	6,171,820		Short	01-09-2001	
DL	BL	6,174,673		Short, et al.	01-16-2001	
DL	BM	6,180,406		Stemmer	01-30-2001	
DL	BN	6,238,884		Short et al.	05-29-2001	

DEC 13 2001

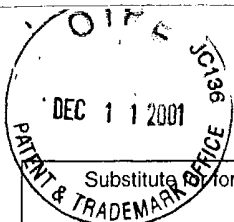
RECEIVED

TECH CENTER 1800/2800

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
DL	BO	WO	97/07205		Novo Nordisk A/S	02-27-1997		
DL	BP	WO	97/20078		Affymax Technologies	06-05-1997		
DL	BQ	WO	97/25410		Novo Nordisk A/S	07-17-1997		
DL	BR	WO	97/35957		Maxygen, Inc.	10-02-1997		
DL	BS	WO	97/35966		Maxygen, Inc.	10-02-1997		
DL	BT	WO	97/44361		Recombinant Biocatalysis Inc.	11-27-1997		
DL	BU	WO	97/48416		Recombinant Biocatalysis, Inc.	12-24-1997		
DL	BV	WO	97/48717		Recombinant Biocatalysis Inc	12-24-1997		
DL	BW	WO	97/48794		Recombinant Biocatalysis Inc	12-24-1997		
DL	BX	WO	98/00526		Recombinant	01-08-1998		

Examiner Signature	<i>David Lambertson</i>	Date Considered	11/12/02
--------------------	-------------------------	-----------------	----------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



(Modified) PTO/SB/08A-B (10-96)
Approved for use through 10/31/99. OMB 0651-0031

Substitute Form 1449A-B/PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(use as many sheets as necessary)

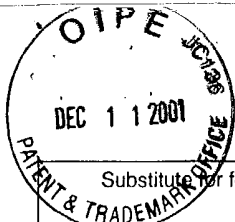
Complete if Known

Application Number	09/849,452
Filing Date	May 4, 2001
First Named Inventor	Michael Lassner
Group Art Unit	1632 1636
Examiner Name	Unassigned D. LAMBERTSON
Attorney Docket Number	02-104910US

					Biocatalysis Inc			
DL	BY	WO	98/01581		Recombinant Biocatalysis Inc	01-15-1998		
DL	BZ	WO	98/13485		Maxygen, Inc.	04-02-1998		
DL	CA	WO	98/13487		Maxygen, Inc.	04-02-1998		
DL	CB	WO	98/24799		Diversa Corp.	06-11-1998		
DL	CC	WO	98/27230		Maxygen, Inc.	06-25-1998		
DL	CD	WO	98/28416		Novo Nordisk A/S	07-02-1998		
	CE	WO	98/31837		Maxygen, Inc.	07-23-1998		
DL	CF	WO	98/36080		The Dow Chemical Company	08-20-1998		
DL	CG	WO	98/41622		Novo Nordisk A/S	09-24-1998		
DL	CH	WO	98/41623		Novo Nordisk A/S	09-24-1998		
DL	CI	WO	98/41653		Novo Nordisk A/S	09-24-1998		
DL	CJ	WO	98/42832		California Institute of Technology	10-01-1998		
DL	CK	WO	98/48034		Diversa Corp.	10-29-1998		
DL	CL	WO	98/58085		Diversa Corp.	12-23-1998		
DL	CM	WO	99/07837		Diversa Corp.	02-19-1999		
DL	CN	WO	99/08539		Diversa Corp.	02-25-1999		
DL	CO	WO	99/10472		Diversa Corp.	03-04-1999		
DL	CP	WO	99/10539		Diversa Corp.	03-04-1999		
DL	CQ	WO	99/19518		Diversa Corp.	04-22-1999		
DL	CR	EP	0911396A2		Maxygen, Inc.	04-28-1999		
DL	CS	WO	99/21979		Maxygen, Inc.	05-06-1999		
DL	CT	EP	0911396A3		Maxygen, Inc.	05-06-1999		
DL	CU	WO	99/23107		Maxygen, Inc.	05-14-1999		
DL	CV	WO	99/23236		Diversa Corp.	05-14-1999		
DL	CW	WO	99/29902		California Institute of Technology et al.	06-17-1999		

Examiner Signature	David Lambertson	Date Considered	11/12/02
-----------------------	------------------	--------------------	----------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



(Modified) PTO/SB/08A-B (10-96)
Approved for use through 10/31/99. OMB 0651-0031

Substituted for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/849,452
	Filing Date	May 4, 2001
	First Named Inventor	Michael Lassner
	Group Art Unit	1632 1634
	Examiner Name	Unassigned D. LAMBERTSON
Attorney Docket Number		02-104910US

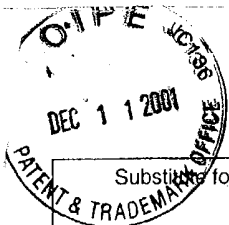
DA	CX	EP	0934999A1		Maxygen, Inc.	08-11-1999		
DB	CY	WO	99/41368		Maxygen, Inc.	08-19-1999		
DC	CZ	WO	99/41369		Maxygen, Inc.	08-19-1999		
DD	DA	WO	99/41383		Maxygen, Inc.	08-19-1999		
DE	DB	WO	99/41402		Maxygen, Inc.	08-19-1999		
DF	DC	WO	99/45154		Diversa Corp.	09-10-1999		
DG	DD	WO	99/57128		Maxygen, Inc.	11-11-1999		
DH	DE	WO	99/65927		Maxygen, Inc.	12-23-1999		
DI	DF	WO	00/42560		Maxygen, Inc.	07-20-2000		
	DG	WO	00/42561		Maxygen, Inc.	07-20-2000		
	DH	WO	00/53744		Diversa Corporation	09-14-2000		
	DI	WO	00/58517		Diversa Corporation	10-05-2000		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
DA	DJ	Chang, C., et al. (1999) "Evolution of a cytokine using DNA family shuffling." <u>Nature Biotechnology</u> 17:793-797.	
DB	DK	Christians, F.C. et al., (1999) "Directed evolution of thymidine kinase for AZT phosphorylation using DNA family shuffling." <u>Nature Biotechnology</u> 17:259-264.	
DC	DL	Coco et al., (2001) "DNA shuffling method for generating highly recombined genes and evolved enzymes" <u>Nature Biotechnology</u> vol. 19 pp. 354-359	
DD	DM	Crameri et al., (1993) "10(20)-Fold aptamer library amplification without gel purification," <u>Nuc. Acids Res.</u> 21(18):4410.	
DE	DN	Crameri, A. & Stemmer W.P.C. (1995) "Combinatorial multiple cassette mutagenesis creates all the permutations of mutant and wildtype cassettes." <u>Biotechniques</u> 18:194-195.	
DF	DO	Crameri, A. et al. (1996) "Improved green fluorescent protein by molecular evolution using DNA shuffling." <u>Nature Biotechnology</u> 14:315-319.	
DG	DP	Crameri, A. et al. (1996) "Construction and evolution of antibody-phage libraries by DNA shuffling." <u>Nature Medicine</u> 2:100-103.	
DH	DQ	Crameri, A. et al., (1997) "Molecular evolution of an arsenate detoxification pathway by DNA shuffling." <u>Nature Biotechnology</u> 15:436-438	

Examiner Signature	David Lambertson	Date Considered	11/12/02
--------------------	------------------	-----------------	----------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/849,452
	Filing Date	May 4, 2001
	First Named Inventor	Michael Lassner
	Group Art Unit	1632-1636
	Examiner Name	Unassigned D. LAMBERTSON
	Attorney Docket Number	02-104910US

DL	DR	Crameri, A. et al., (1998) "DNA shuffling of a family of genes from diverse species accelerates directed evolution." <u>Nature</u> 391:288-291.	
DL	DS	Gates, C.M. et al., (1996) "Affinity selective isolation of ligands from peptide libraries through display on a lac repressor 'headpiece dimer'." <u>Journal of Molecular Biology</u> 255:373-386.	
DL	DT	Minshull, J., Stemmer, W.P.C. (1999) "Protein evolution by molecular breeding." <u>Current Opinion in Chemical Biology</u> 3:284-290.	
DL	DU	Ness, J. et al., (1999) "DNA shuffling of subgenomic sequences of subtilisin." <u>Nature Biotechnology</u> 17:893-896.	
DL	DV	Patten, P.A. et al., (1997) "Application of DNA Shuffling to Pharmaceuticals and Vaccines." <u>Current Opinion in Biotechnology</u> 8:724-733.	
DL	DW	Pelletier, Joelle N., (2001) "A Rachitt for our toolbox" <u>Nature Biotechnology</u> vol. 19, p. 314-315	
DL	DX	Stemmer, W.P.C. (1994) "DNA Shuffling by random fragmentation and reassembly: In vitro recombination for molecular evolution." <u>PNAS</u> 91:10751	
DL	DY	Stemmer, W.P.C. (1994) "Rapid evolution of a protein in vitro by DNA shuffling." <u>Nature</u> 370:389-391.	
DL	DZ	Stemmer, W.P.C. (1995) "The Evolution of Molecular Computation." <u>Science</u> 270:1510	
DL	EA	Stemmer, W.P.C. (1995) "Searching Sequence Space." <u>Bio/Technology</u> 13:549-553.	
DL	EB	Stemmer, W.P.C. (1996) "Sexual PCR and Assembly PCR." In: <u>The Encyclopedia of Molecular Biology</u> . VCH Publishers, New York. pp. 447-457.	
DL	EC	Stemmer, W.P.C. & Soong, N.W. (1999) "Molecular breeding of viruses for targeting and other clinical properties." <u>Tumor Targeting</u> 4:59-62.	
DL	ED	Zhang, J. et al., (1997) "Directed evolution of an effective fucosidase from a galactosidase by DNA shuffling and screening." <u>Proceedings of the National Academy of Sciences, USA</u> 94:4504-4509.	

Examiner Signature	David Lambertson	Date Considered	11/12/02
--------------------	------------------	-----------------	----------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.